California Department of Health Services

Information Technology Hardware and Software Standards

Volume 1

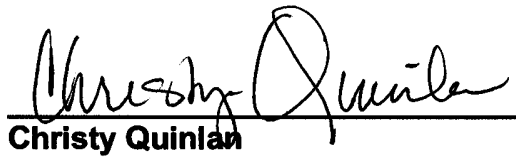
Revised June 30, 2006

Information Technology Standards

I am pleased to present the latest Information Technology Standards to the California Department of Health Services (CDHS). These Information Technology (IT) standards are intended to provide consistency across the CDHS, to facilitate the cost effective implementation of IT systems, ensure high-quality service levels, and to maximize the Department's return on IT investments.

The standards presented in this document provide direction to divisions, offices and all other operating units in the acquisition of new IT systems and in the migration of existing systems and components to a standardized environment. The standards address the hardware, software and IT operating practices to be used by the Department and attempt to ensure compatibility, connectivity and interoperability. The standards apply to the Department's entire IT environment and are applicable in all operating units of the Department.

I believe that you will find this document a strategic asset in helping CDHS realize the many benefits to be derived from a unified technology environment.



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06/30/06
Date

Department of Health Services
Information Technology Standards

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1 Introduction

1.1 Objectives and Benefits

This document defines effective and usable standards in support of the CDHS' business processes and environment. The objectives and benefits of the CDHS IT standards include:

- Improve service level to internal and external customers.

  The CDHS IT standards are based on mature technology proven to interoperate effectively. The standards contribute to higher levels of customer service and facilitate the establishment of Service Level Agreements (SLA).

- Improve cost effectiveness and reduce life cycle costs.

  The CDHS IT standards leverage our existing infrastructure and expertise while providing cost effective migration paths to newer technologies. Common hardware and software configurations reduce the complexity of the environment resulting in fewer failure opportunities. Staffing, training and development costs are reduced because there are fewer technologies to support. Common configurations also facilitate the consolidation of spare inventories, allow for centralized testing and validation and create a broader base of knowledgeable support staff. The opportunity to establish department-wide software licensing agreements also results in overall cost reductions.

- Increase system availability, maturity and stability.

  Standardized information technology environments lower the risk of technology investment failures and are integral to the delivery of effective solutions. Fewer products from fewer vendors reduce the complexity that frequently leads to interoperability and compatibility related service disruptions.

- Ensure intradepartmental interoperability and efficiency.

  The CDHS IT standards support information interchange, shared services (e.g., e-mail, print services, and database services) and backup and recovery services. The standards also support workflow applications involving all CDHS operating units. A common set of technologies for the creation, transfer and storage of information will enhance the overall efficiency and effectiveness of the Department.

- Improve portability, flexibility and scalability.

  The CDHS IT standards define an information technology environment that supports existing applications and positions the CDHS for continued implementation of new IT solutions. Through these standards, applications developed in one business unit are more easily migrated to other units, and applications designed for small workgroups can be implemented for larger groups with little difficulty.

- Improve security.

  The Department's IT Security Policy and Plan specifies requirements for security. The standards for physical, Internet, Intranet, and personal computer security enable consistent and manageable security over the Department's IT assets. The application of these standards enables CDHS to continue providing a secure IT environment.

- Improve network manageability.

  Standards-based infrastructure design and implementation are essential for a network that is predictable, provides high availability and is managed effectively. The CDHS IT standards define this infrastructure as well as the tools for effective management.

1.2 Implementation Requirements and Exceptions

The CDHS IT standards are requirements for all CDHS operating units. Within the CDHS, the Chief Information Officer (CIO) is responsible for establishing information technology policy and enforcing the standards.

No exceptions to compliance with these standards are allowed unless appropriate approval is obtained in advance by the CDHS' CIO.

Exceptions to these standards must be approved by the CIO prior to procurement, and are granted on a case-by-case basis. Exceptions can be requested by using the Request for Exception Form in section 7.1, following the process described in section 7.2.

1.3 Changes to the Standards

The CDHS IT standards will be reviewed and updated semi-annually to address changes in technology and business requirements. More frequent updates may occur as necessary. Ongoing review of this document will ensure accuracy and compatibility with business objectives.

The following items may drive changes to the standards:

- Changes in technology
- Security requirements
- New business needs
- Exception request trends
- Specific request

It is the responsibility of each division to suggest changes to the CDHS IT standards which address identified or anticipated business needs. Changes can be submitted by business units, LAN Administrators, and ITSD staff. Such feedback should be directed to the I2E Committee. The I2E Committee is a team of ITSD and business unit staff who evaluate IT standard changes, for recommendation to the CIO. After approval by I2E and the CIO, changes will be incorporated into the next document release, and published on the CDHS Intranet. A high level summary of the changes will be added to the revision history log at the end of this document.

1.4 Definitions

The following words and phrases are used throughout this document and are defined here for ease of review.

Term:	Definition:
Desktop:	A personal computer commonly found on a user's desk, also referred to as a microcomputer.
Desktop Printer:	A printing resource (printer) attached directly to the user's desktop computer with a local connection.
Laptop:	A portable computer running the traditional Windows Operating system (i.e. Win 2K, or Win XP)
Minimum:	In those instances where the standard is indicated as a minimum, the standard may be exceeded without an exception requirement.
Multi-Workgroup:	Applications or devices used by more than one workgroup of CDHS employees.
Personal Computer (PC):	A desktop or laptop computer.
Personal Digital Assistant (PDA):	A handheld device that serves as beefed-up organizer or toned-down laptop. In addition, some PDAs combine the computing functions with telephone/fax, Internet and networking features
Tier 1 Build:	A suite of applications and their configurations, approved for use on every CDHS personal computer.
Workgroup:	An application or device used by a Workgroup within a CDHS Division or Office. The Workgroup could be a business unit within a Branch or Office, or within a small business unit.
Workgroup Printer:	A printing resource available on the Local Area Network that is shared by two or more users.

2 Desktop, Laptop, Printer, and Mobile Computing Standards

2.1 Desktop and Laptop Hardware Standards

Below are the hardware standards for all newly acquired desktop and laptop computers.

Desktop Unit – HP		
Category	**Standard**	**Remarks**
Manufacturer & Model:	HP/Compaq DC7600 CMT	DGS P/N: EF664US
Processor:	Intel Pentium IV	
Processor Speed:	3.0 GHz	
Network Interface:	10/100/1000 Ethernet	
Storage (Disk):	80 GB Hard Drive and 1.44 FDD	
Memory:	1 GB RAM	
DVD Reader:	CD-RW/DVD-ROM Drive	

Desktop Unit – Gateway		
Category	**Standard**	**Remarks**
Manufacturer & Model:	Gateway E4500D	DGS P/N: 1008486 Item # 5 on CSSI contract
Processor:	Intel Pentium IV	
Processor Speed:	3.0 GHz	
Network Interface:	10/100/1000 Ethernet	
Storage (Disk):	80 GB Hard Drive and 1.44 FDD	
Memory:	1 GB RAM	
DVD Reader:	CD-RW/DVD-ROM Drive	

Laptop Unit – IBM (Tier 1)		
Category	**Standard**	**Remarks**
Manufacturer & Model:	IBM/Lenovo ThinkPad R52	DGS P/N: 1848W2S
Processor:	Intel Pentium M	
Processor Speed:	2.0 GHz	
Network Interface:	10/100/1000 Ethernet	
Storage (Disk):	40 GB Hard Drive	
Memory:	1 GB RAM	
DVD Reader:	CD-RW/DVD Combination Drive	
Accessory Requirements	Floppy, ThinkPad Mini-Dock, Carrying Case	Mini-Dock P/N: 287810U
Display Size:	15 in.	
Screen Type:	TFT	
Display Resolution:	1024 x 768 @ 16.7 Million Colors (24-bit) Internal Support 2048 x 1536 @ 16.7 Million Colors (24-bit) External Support	

Laptop Unit – Gateway (Tier 1)		
Category	**Standard**	**Remarks**
Manufacturer & Model:	Gateway M465E	DGS P/N: 1008351 Item # 5 on CSSI Contract
Processor:	Intel Pentium M	
Processor Speed:	2.0 GHz	
Network Interface:	10/100/1000 Ethernet	
Storage (Disk):	40 GB Hard Drive	
Memory:	1 GB RAM	
DVD Reader:	CD-RW/DVD Combination Drive	
Accessory Requirements	Floppy, Port Replicator, Carrying Case	
Display Size:	15 in.	
Screen Type:	TFT	
Display Resolution:	1024 x 768 @ 16.7 Million Colors (24-bit) Internal Support 2048 x 1536 @ 16.7 Million Colors (24-bit) External Support	

2.2 Monitor Standards

Below are the hardware standards for all newly acquired monitors.

LCD Monitor		
Category	**Standard**	**Remarks**
Manufacturer:	Gateway	HP Monitors can only be purchased as part of a PC bundle
Model:	FPD 1775	DGS P/N: 1533998
Size:	17” color TFT	
Dot Pitch:	0.264mm dot pitch	
Resolution:	1280 X 1024	
Compliant Standards:	FCC Class B certified, CE, UL, TUV GS, VCCI, cUL, EPA Energy Star, NOM	
Response Time:	8 ms	

CRT Monitor		
Category	**Standard**	**Remarks**
Manufacturer:	Gateway	
Model:	VX765	DGS Part Number: 1534759
Size:	16” Viewable	
Resolution:	1280 X 1024 Pixels	
Power Saving Compliance:	EPA Energy Star & VESA power saving requirements	
Low Emissions Compliance:	Swedish MPR-II’s low emission recommendations	

2.3 Printer Standards

2.3.1 Workgroup Printer Standards

Below are the standards for all departmental printers to be operated within the CDHS environment. These standards must be met for a printer to be supported in any activity including connection to the CDHS network.

Black and White Networked Printer, HP		
Category	**Standard**	**Remarks**
Manufacturer:	HP	High Volume Printing
Model:	LaserJet 4250n	DGS P/N: Q5401A
Resolution:	1200 DPI	
Network Interface:	Hi-speed USB 2.0 port, IEEE 1284-B compliant parallel port	
Print Languages:	PCL 6, PCL 5e, PostScript® 3™ emulation	
Memory:	64 MB RAM	
Printing:	Letter, Legal, Duplexing	

Black and White Networked (Workgroup) Printer, HP		
Category	**Standard**	**Remarks**
Manufacturer:	HP	Low Volume Printing
Model:	LaserJet 2420n	DGS P/N: Q5959A#ABA
Resolution:	1200 DPI	
Network Interface:	Hi-speed USB 2.0 port, IEEE 1284-B compliant parallel port	
Print Languages:	PCL 6, PCL 5e, PostScript® 3™ emulation	
Memory:	36 / 320 MB RAM	
Printing:	Letter, Legal, Automatic Duplexing	

Color Networked Printer, HP		
Category	**Standard**	**Remarks**
Manufacturer:	HP	
Model:	LaserJet 3600dn	DGS P/N: Q5988A#ABA
Resolution:	600 DPI	
Connectivity:	1 USB, 1 parallel, 1 Ethernet	
Print Languages:	PCL 6, PCL 5e, PostScript® 3™ emulation	
Memory:	64 MB RAM	
Printing:	Letter, Legal, Duplexing	

Plotter Printer, HP		
Category	**Standard**	**Remarks**
Manufacturer:	HP	
Model:	DesignJet 1055cm Plus	DGS P/N: C6075B#ABA
Resolution:	Black: 1200 x 600 DPI ; Color: 600 x 600 DPI	
Connectivity:	Centronics parallel, IEEE 1284-compliant (including ECP), HP EIO internal print server for Fast Ethernet 10/100 Base-TX	
Print Languages:	HP=G/L/2, HP-GL, HP RTL, Adobe PostScript® 3™ emulation	
Memory:	64 MB RAM min 256 MB max	
Printing:	8.3 to 36 in wide sheets; 24" and 36 " rolls	Max print length 300 ft; 900 Ft with optional multi-roll feeder

2.3.2 Desktop Printer Standards

Below are the standards for all desktop (personal) printers to be operated with the CDHS departmental infrastructure. These standards must be met for a printer to be supported in any activity

Standalone Printer, HP		
Category	**Standard**	**Remarks**
Manufacturer:	HP	
Model:	LaserJet 1020	DGS P/N: Q5911A
Resolution:	1200 DPI	
Printing:	Letter, Legal	
Print Languages:	Host-based Printing	
Memory:	2 MB RAM	
Connectivity:	USB	

Standalone Mobile Printer, HP		
Category	**Standard**	**Remarks**
Manufacturer:	HP	
Model:	Inkjet Mobile Printer 460C	DGS P/N: C8150A
Resolution:	Black: 1200 DPI; Color: 4800 DPI	
Printing:	Letter, Executive, Legal	
Print Languages:	HPPCL 3 Enhanced	
Memory:	32 MB RAM	
Connectivity:	USB	

2.3.3 Networked Multifunction Laser Printer Standards

Below are the standards for all networked multifunction laser printers to be operated within the CDHS environment.

Multifunction Networked Printer, HP		
Category	**Standard**	**Remarks**
Manufacturer:	HP	
Model:	LaserJet 9050mfp	HP P/N Q3728A This item is not on the CSSI contract. No MFP is covered under CSSI
Resolution:	600 DPI	
Network Interface:	Bidirectional IEEE 1284-B compliant parallel port, available EIO slots	
Print Languages:	PCL 6, PCL 5e, PostScript® 3™ emulation	
Memory:	128 MB RAM	
Printing:	Letter, Legal, Duplexing	

2.4 Software Standards – Tier 1

All newly acquired personal computers must be configured with the authorized CDHS Tier I Build which consists of the following software. The Client Technology Unit (CTU) is responsible for creating the authorized CDHS Tier I Build.

Category	Standard	Remarks
Operating System:	Microsoft (MS) Windows XP Professional SP2	Support for Windows 2000 Pro ends June 2009
Hard Disk Encryption	GuardianEdge Encryption Plus Hard Disk 7.1.4	
Office Application Suite:	MS Office 2003 Professional SP2 - MS Word - Word Processing - MS Excel - Electronic Spreadsheet - MS PowerPoint - Presentation Graphics - MS Access – Database	Support for Office XP (2002) ends June 2008 Support for Office 2000 ends June 2007
Anti-Virus:	Symantec Antivirus 10.0.2.2001	
System Management:	MS Systems Management Server (SMS) 2003 SP1	
E- Mail and Calendaring:	MS Outlook 2003	Support for Outlook XP (2002) ends June 2008 Support for Outlook 2000 ends June 2007
Web Browser:	MS Internet Explorer v6 SP1	Support for Internet Explorer 5.x ends June 2006
Compression Software:	WinZip 9.0	Support for WinZip 8.0 ends June 2007
Document Reader:	Adobe Reader 7.x	Support for Adobe Reader 6.x ends June 2007

2.5 Software Standards – Tier 2

The following software packages are to be used for specific individual and workgroup applications when needed:

Category	Standard	Remarks
Project Management	MS Project 2003	Support for Project 2002 ends June 2011 Support for Project 2000 ends June 2009
Document Publishing	Adobe Acrobat 7.0x	
Web content development	MS FrontPage 2003	
Application Development	MS Visual Studio .Net 2003	
Diagramming	Visio 2003	Support for Visio 2002 ends June 2010 Support for Visio 2000 ends June 2007
Help Desk	Remedy User/Desktop Version 5.1.2	
3270 Terminal Emulation:	IBM Personal Communications	
Secure FTP	Ipswitch WS-FTP Pro 2006	
Data Analysis	SAS	
Geographic and Spatial Analysis	ArcGIS, ArcView, ArcInfo 9.1	
Graphics Editor	Adobe PhotoShop CS2	
Desktop Reporting	Crystal Reports XI	
Screen Capture	SnagIt 8.0	
Screen Recording	Camtasia Studio Presentation 3.1	
Speech Recognition	Dragon NaturallySpeaking 8	

2.6 Software Standards – Administration Utilities

The following software packages will generally only be used by authorized PC or Server administrators:

Category	Standard	Remarks
Desktop Imaging	Symantec Ghost 7.5	
Remote Control	PC: Microsoft SMS Server: Microsoft Terminal Server	
Server Administration Utilities	Dameware 5.x Lieberman User Manager Pro 6.5x Lieberman Service Account Manager 4.1x	
Active Directory Utilities	Netpro Diagnostics for Active Directory Suite Scriptlogic Active Administrator 4.0x	

2.7 Mobile Computing Standards

2.7.1 Personal Digital Assistant (PDA) Standards

Below are the standards for all PDA devices to be operated with the CDHS departmental infrastructure. These standards must be met for a PDA to be supported in any activity, including connection to personal computing devices.

Category	Standard	Remarks
Manufacturer:	HP	
Model:	iPAQ hx2755 Pocket PC	
Operating System:	Windows CE or Pocket PC	
Programming Language:	Visual Basic or Visual Basic for Applications is recommended.	
Synchronization:	Must not require local administrative or elevated user or network rights for normal use.	

Category	Standard	Remarks
Manufacturer:	Dell	
Model:	Axim X50 520 MHz	
Operating System:	Windows CE or Pocket PC	
Programming Language:	Visual Basic or Visual Basic for Applications is recommended.	
Synchronization:	Must not require local administrative or elevated user or network rights for normal use.	

2.7.2 Wireless Messaging Standards

Below are the standards for Wireless Messaging devices to be operated with the CDHS departmental infrastructure.

Category	Standard	Remarks
Manufacturer:	Research in Motion	
Model:	Nextel Blackberry 7520, 7100i Cingular Blackberry 7290, 7100 Verizon Blackberry 7250, 7130e	Nextel Blackberry is recommended
Operating System:	Symbian OS ver 4.1.0	
Synchronization:	Must not require local administrative or elevated user or network rights for normal use.	Desktop Manager v 4.1 needed to manually synchronize device

3 Network Server Technology Standards

The server standards covered in this document have been prepared by the Information Technology Services Division (ITSD) of the California Department of Health Services (CDHS) and must be adhered to when purchasing CDHS servers. The following server standards were developed to maximize server availability, supportability, security, data integrity and to lower the total cost of ownership in CDHS. These server standards apply to all CDHS servers or servers containing CDHS information whether they are acquired or maintained through normal CDHS procurement channels or outside contractors.

3.1 Server Hardware Standards

Server hardware shall be purchased that conforms to the following standards. For specific models, part numbers and prices, contact the ITSD Server Support Unit. Since models change frequently, the list is maintained and updated regularly. Contact the ITSD Server Support Unit to size special or non-standard server configurations. Note that application and database servers may require an approved feasibility study report (FSR) prior to purchase.

3.1.1 Standard Server Configuration

The following hardware configuration is the standard configuration for most of the servers within CDHS. These systems are the basic platform for file, print, web, monitoring, backup, domain controllers, WINS, DNS, DHCP, ISA, application and small to medium database servers.

Category	Standard	Remarks
Server Type:	Dell PowerEdge 2800/2900 series with rack mount conversion kit	CSSI- Basic 2 PC Server- 2900 series will replace 2800 in June 2006.
Processor :	Two Intel Xeon processors at 3.0 GHz or higher	Included in CSSI-Basic 2 PC Server
RAM Memory:	1 GB RAM or higher	Included in CSSI-Basic 2 PC Server
Controller:	Embedded RAID - PERC4. Minimum of 128 MB Battery Backup Write and Read Cache (BBWC)	Included in CSSI-Basic 2 PC Server
Disk Drives:	A minimum of four SCSI 72GB or bigger drives. Standard configuration is Raid 5 plus one hot spare	CSSI Off Spec Only 36 GB hard disk drives are on CSSI for this model.
Network Interface Card:	Dual NIC 10/100/1000	Included in CSSI-Basic 2 PC Server
Power Supplies:	Dual redundant hot plug power supplies	Included in CSSI-Basic 2 PC Server
Fans:	Dual redundant hot plug fans	Included in Basic 2 PC Server
Warranty:	Four years of DELL service maintenance should be purchased with the server. This is a 24x7x4 hours.	Upgrade to CSSI –Basic 2 PC Server
DRAC Dell Remote Access Card:	These boards are not required but may be purchased to provide access to servers installed at remote locations	CSSI Off Specs

3.1.2 High End Server Configuration

The following high end server specifications are typically used for large database servers and Exchange e-mail servers. Anyone purchasing such servers should consult with the ITSD Server Unit to determine appropriate size and capacity needed.

Category	Standard	Remarks
Server Type:	Dell PowerEdge 2800/2900 series with rack mount conversion kit.	CSSI- Basic 2 PC Server- 2900 series will replace 2800 in June 2006.
Processor:	Two Intel Xeon Dual Core processors at 2.8GHz or higher	The dual core processors are an allowed option under CSSI.
RAM Memory:	2 GB Ram or higher	
Disk Drives:	A minimum of four SCSI 72GB or bigger drives. Standard configuration is Raid 5 plus one hot spare	CSSI Off Spec Only 36 GB hard disk drives are on CSSI for this model.
RAID Controller:	Embedded RAID - PERC4. Minimum of 128 MB Battery Backup Write and Read Cache (BBWC)	
Network Interface Card:	Dual NIC 10/100/1000	Multiple NICs may be used for special circumstances only.
Power Supplies:	Dual redundant hot plug power supplies.	
Fans:	Dual Redundant Hot Plug Fans.	
Warranty:	Four years of DELL service maintenance should be purchased with the server. This is a 24x7x4 hours.	Upgrade to CSSI –Basic 2 PC Server
DRAC Dell Remote Access Card:	These boards are not required but may be purchased to provide access to servers installed at remote locations	CSSI Off Spec

3.1.3 Custom Server Configuration

Custom servers shall comply with the above standards as closely as possible. The purchase of a non-standard server shall be based on specific business needs that can not be met with either a standard server or an approved high end server. These needs must be justified in writing and receive CIO approval prior to its purchase. Any request for a non-standard server shall be reviewed by the ITSD Server Management Unit and their input will be given to the CIO before a final purchasing decision is made.

3.1.4 Racks and Accessories

Servers shall be properly mounted in a rack designed to house servers and have rack-mounting rails designed specifically for the server type. All servers being purchased shall be rack mountable style. Freestanding models are not acceptable. The following types of racks, Uninterruptible Power Supplies (UPS) and accessories need to be purchased for the number of servers and types being installed.

Category	Standard	Remarks
Racks:	Hewlett Packard (HP) 36U server racks. A maximum of 3 UPSs per rack and no more than 6 servers per rack will be located in each rack if only one 20 amp circuit is provided to that rack.	
UPS:	HP Smart UPS standard, 1500 watt - 110 volt plug versions only. One 1500 watt UPS may only serve a maximum of two servers. All power supplies in a given server should be plugged into a common UPS.	Due to their weight, UPSs must be mounted at the bottom of the rack.
Rails:	Each server shall have rails that allow it to be mounted in a standard 19” server rack.	
Other:	One Monitor, Keyboard, Mouse and 8-port KVM switch will be purchases for every two racks installed. (Exception: In small sites where only one rack is installed, one Monitor, Keyboard, Mouse and a 4-port KVM switch can be purchased per rack.)	

3.2 Server Software Standards – Tier 1

Software purchased for CDHS servers shall adhere to the following standards. Application level software written or developed for CDHS servers shall be compatible with the above hardware and the following software standards. For specifications on the current versions of the listed Tier 1 software, please contact the ITSD Server Support Unit.

Tier 1 server software encompasses the operating system and software that is common to all servers on the CDHS network.

Category	Standard	Remarks
Operating System:	Microsoft Windows Server 2003 SP1. (The enterprise edition is also permitted when required by an application)	Support for MS Windows Server 2000 SP4 ends Dec 2007
Anti-Virus:	Symantec Antivirus 9.0.310	
Installation:	HP SmartStart 7.3	
Backup:	Veritas Backup Exec 10.0 5520	Support for Veritas Backup 9.1.1 4693 ends Dec 2006
Asset Management:	Microsoft Systems Management Server 2003 SP1	
Server Monitoring:	HP Insight Manager Agents 7.3 HP OpenView 7.5 Dell Open Manage	
Patch Deployment:	Update Expert 6.3 or SMS	
Web Browser:	Internet Explorer 6.0	
Remote Administration:	Terminal Services	Built into Microsoft OS
Power Management:	HP Power Management 2.02	

3.3 Server Software Standards – Tier 2

Software purchased for CDHS servers shall adhere to the following standards. Application level software written or developed for CDHS servers shall be compatible with the above hardware and the following software standards. For specifications on the current versions of the listed Tier 2 software, please contact the Server Support Unit, Internet Unit and/or Database Unit in ITSD.

Tier 2 software includes commonly used applications that are used on a large number of servers, such as File, Print, Web, Database and E-mail servers that are the foundation for other specific applications that may run on top of these servers. Tier II software assumes that all standard software in Tier 1 is used unless otherwise specified below.

3.3.1 Messaging Servers

Category	Standard	Notes
Messaging Software	Exchange 2003 Enterprise Edition SP2	
Email Encryption	Voltage Appliance 2.0	
Content Filtering & Anti-Spam	Proofpoint Appliance 3.0	4.0 in testing
Fax Servers	Right Fax 8.7	9.0 in testing
List Servers	LSoft ListServ 14.4	
Storage Area Network:	HP SAN Platform Kit 3.0F HP Secure Path 4.03 SP2	
Tape Backup	Backup Exec Version 9.1 SP4a	
Server Auditing	Ecora Enterprise Auditor 4.0	
Email Anti-Virus	Trend Micro Scan Mail for Exchange 6.2	7.0 in testing

3.3.2 Web Servers

Category	Standard	Remarks
Web Server	MS Internet Information Server (IIS) 6.0	Support for IIS 5.0 ending Dec 2008
Content Management	Site Server 3.0 SharePoint Content Management Server	Site Server support ending Dec 2008, no new deployments
Intrusion Prevention	Cisco Security Agent (CSA)	
Server Auditing	Ecora Enterprise Auditor 3.6	
Performance Diagnostics		Support for Spotlight 3.0 (IIS 5.0) ending Dec 2007
Reporting	Webtrends 6.1	
Usability & Accessibility	WatchFire Web XM 4.0	
PKI Certificates	Verisign Managed PKI	
Secure FTP	IP Switch WS-FTP	

3.3.3 Database Management Servers

Category	Standard	Remarks
SQL Servers	Microsoft SQL 2000, SP4	Support for SQL 7 with SP4, Security fix 1004 ends June 2007
DB Administration	Idera SQLSuite, Ent. Ed.	
Intrusion Prevention	Cisco Security Agent (CSA)	
Server Auditing	Ecora Enterprise Auditor 3.6	Support ISS – Database Security Scan 4.3 ends December 2006
Database Tuning:	SQL Server Resource Kit Idera SQL Suite – Ent. Ed.	Resource Kit includes:SQL Load Simulator, Data Simulator, Database Generator, Data Sizer, SQL Execution Timer, SQL Hard Disk Test Utility
Database Diagnostic:	SQL Profiler Idera SQL Suite – Ent. Ed.	
Database Auditing:	Idera SQL Suite – Ent. Ed.	
Database Change Management:	Redgate SQL Bundle	
Database Reporting and Business Intelligence	Business Objects 6.1	- BO 6.5 in testing - Support for MS SQL Reporting Services

3.3.4 Help Desk Servers

Category	Standard	Remarks
Core Component:	Remedy Action Request System Software, ARS Version 5.01.02	
Help Desk Component:	Remedy Help Desk Module, Version 4.0	
Asset Management Component:	Remedy Asset Management Module, Version 5.01.02	
Change Management Component:	Remedy Change Request Module, (Not installed)	
Report Component:	Crystal Reports, Version 8.5/9	

3.3.5 Remote Access and Communication Servers

Category	Standard	Remarks
Remote Control	Citrix Presentation Server 4.0	
Blackberry to Exchange Synchronization	RIM Blackberry BES 4.0	
Mainframe Gateway	Microsoft Host Integration Server 2000 Version 5.00.0798	
Web Conferencing	Avaya Meeting Exchange	

3.3.6 Infrastructure Support Servers

Category	Standard	Remarks
IP Address allocation	Microsoft DHCP, Windows Server 2003	
Name Resolution	Microsoft DNS and WINS, Windows Server 2003	
Directory Services and Authentication	Active Directory 2003	
Anti-Virus	Symantec Enterprise Security Architecture (SESA) 2.1 Symantec System Center 6.0	
Asset Management	MS Systems Management Server 2003, Version 2.50.3174.1018 SMS Advanced Client Version 2.50.3174.1015	
Proxy Server	MS Internet and Acceleration Server 2004	

Message Broker	MS BizTalk 2004	
Server Monitoring	HP Insight Manager 7.3	

3.4 Server Environmental Standards

In order to maximize uptime and avoid costly repairs, servers must be maintained in a suitable environment. The following standards outline optimal conditions for severs and should be adhered to as closely as possible. Major deviations from these requirements must be approved in advance by the CIO.

Servers are to be maintained in a secure, cool, dry, and relatively dust free environment with adequate electrical and air conditioning service to meet the loads required by the servers. CDHS programs shall address the environmental requirements listed below for the total number of servers being installed before purchasing server equipment.

Category	Standard	Remarks
Air Conditioning:	Adequate tonnage of air conditioning shall be provided to accommodate the BTU output of all servers in order to maintain the temperature and humidity standards. Redundant air conditioning should be provided in large facilities housing many servers.	
Electrical:	One or two dedicated 110-volt 20-amp circuits with a minimum of four outlets shall be provided for each server rack.	
Humidity:	Maintain relative humidity between 40% and 60%, 24 hours and 7 days a week.	
Miscellaneous:	No food, drinks or liquids should be allowed in the immediate vicinity of any server or server rack.	
Space: Required:	Each rack requires 2’ wide x 9’ long clear floor space to permit access to the front and back of each rack.	

Storage/Access:	Each server shall be rack mounted in a secure locked room and/or locked rack in such a manner that physical access to the server is limited to server administrators only.	
Temperature:	Maintain ambient air temperature between 66 and 72 degrees Fahrenheit, 24 hours a day 7 days a week.	

4 Network and Data Communication Standards

The Telecommunications, Network, and Remote Access standards described here were compiled by the Network Infrastructure Unit (NIU) of the Information Technology Services Division (ITSD) of the California Department of Health Services (CDHS). These standards were developed to ease connectivity into, maintain compatibility with, and reduce the total cost of ownership of the CDHS Enterprise Network. Abiding by these standards will allow CDHS to keep the CDHS Enterprise Network current with regards to patches, fixes, and updates. Exceptions to these standards must be processed through the CDHS exception process.

4.1 Telecommunication Standards

In general, CDHS standards usually provide for two (2) CAT5e data jack and two (2) analog telephone jacks per workstation. All telephone services, including DSL, Digital, ISDN, Multi-channel, ISDN, BRI's and PRI's, are handled by the Telecommunications Unit of Programs Support Branch through a Telephone/Data Service Request Form or through DTS depending on the termination point.

4.1.1 High-speed Data Circuits

The following High-speed Data circuits, acquired through DTS via the Service Request Process, are currently approved methods for the CDHS Enterprise WAN.

Category	Standard	Remarks
OC3		Provided by DTS
T3	ATM & Point-to-Point	Provided by DTS
T1	Frame Relay	Provided by DTS
Fractional T1	Frame Relay	Provided by DTS
DSL:	Private or Internet	Provided by DTS
ISDN		Provided by DTS

4.1.2 Voice Circuits

The following circuits, acquired through DTS or CDHS's Program Support Branch, are currently approved methods for voice circuits and phone bridges.

Category	Standard	Remarks
Channelized T3		Provided by DTS or PSB
Channelized T1		Provided by DTS or PSB
PRI		Provided by DTS or PSB
BRI		Provided by DTS or PSB

4.1.3 Telecom Closet Standards

The following items must be met to meet the minimum qualifications for a CDHS Main Data Facility (MDF) or an Intermediate Data Facility (IDF).

Category	Standard	Remarks
Temperature	A/C capacity to maintain 72 degrees during summer.	
Electrical	Dedicated Circuit availability up to 30 amps.	
Physical	Key lock or key card restricted/limited access	
MPOE access	MDF direct access to MPOE or in same room.	
Other:	SBC requirements	

4.1.4 Racks and Accessories

The following items are used to populate the Main Data Facility (MDF) or an Intermediate Data Facility (IDF).

Category	Standard	Remarks
Racks:	Chatsworth Universal 19" or equivalent enclosure	pending application
UPS:	APC Rack-mount Smart-UPS 20 amp versions, usually 1500XL or 2200XL	15 min. min.; 1/pwr supply/device
Cable Runways:	Chatsworth Universal or better	
Seismic:	As necessary to meet or exceed State Earthquake Zone Requirements	
Electrical:	Minimum 2 – Dedicated 20 amp electrical circuits	
Other:		

4.2 Network Topology Standards

Current network topology standards are based on a hub and spoke design with DTS as the hub point for all CDHS sites.

4.3 Network Topology and Equipment Standards

CDHS has standardized on Cisco Systems Inc. for our network equipment. The primary reason for this is the ability to push out patches and updates to this equipment from a central management tool.

4.3.1 Router, CSU/DSU Hardware

Category	Standard	Remarks
DSL (1-10 users)	Cisco 1700 Series with K9 Security Bundles w/ internal CSU/DSU	provided through DTS
Low capacity (1-300 Users)	Cisco 2800 Series with K9 Security Bundles w/ internal CSU/DSU	provided through DTS
Mid capacity (300-1000 Users)	Cisco 3800 Series with K9 Security Bundles w/ internal CSU/DSU	provided through DTS
High capacity (1000+ Users):	Cisco 7200 Series with K9 Security Bundles w/ internal CSU/DSU	provided through DTS

4.3.2 Switching Hardware

Category	Standard	Remarks
Access <40 staff	Cisco 2950G or 2950T Series	
Access >100 staff	Cisco 3750 / 3750G or 4500 Series	
Distribution	Cisco 4506 Series or Cisco 6500 Series	
Core	Cisco 6500 Series for a large campus'	
Other:		

4.3.3 Battery Backup / UPS Standards

Category	Standard	Remarks
UPS:	APC Rack-mount Smart-UPS 20 amp versions, usually 1500XL or 2200XL	15 min. min.; 1/pwr supply/device
Other:	APC UPS Network Management Card	

4.4 Data Cabling & Connector Standards

4.4.1 Data Cabling Standards

Category	Standard	Remarks
Copper 300' max	CAT5e or higher	
Fiber 0-2000'	62.5/125 micron Multi-mode fiber	
Fiber 2000' +	8 micron Single-mode fiber	
Copper Patch Cord	CAT5e or higher stranded patch cord, wired straight through.	Length based on application.
MMF Patch Cord	62.5/125 terminated with SC connectors on each end.	Length based on application.
SMF Patch Cord	62.5/125 terminated with SC connectors on each end.	Length based on application.
Other		

4.4.2 Data Jack/Connector/Wiring Standards

Category	Standard	Remarks
Copper Jacks	RJ-45 wired to AT&T 568B specs	
Fiber Jacks	SC form factor	
Copper Patch Panels	Panduit Data-Patch CAT5e Patch Panel T568B Wired or equivalent	
Fiber Patch Panels	Leviton RDP Series Fiber Rack-mount enclosures or equivalent.	
Other:		

4.5 Communications Protocols and Addressing Standards

4.5.1 Protocols Standards

Category	Standard	Remarks
Routing	RIP, EIGRP	
Routed	IP, SNA, DLSW	

4.5.2 IP Addressing Standards

CDHS is deploying a Private IP (PIP) Addressing throughout the CDHS Enterprise. Below is a summary of how PIP will be deployed and broken out at our remote sites.

Management Networks

The first choice at each site is to have a separate network for the infrastructure management from the user subnets. This would allow the users network to be disabled when needed for troubleshooting, and still be able to manage the infrastructure devices. The limitation on this design would be dependent upon the site's router model and IOS. If the hardware limitation does not allow this implementation, then the user and management networks will be from the same class C

From the class B network, the first eight class C's will be designated as the management subnets. We will not use (initially) the first class C – 10.1.0.0. Further, each class C will be subnetted with a mask of 255.255.255.224 (27 bit). This will give eight subnets per class C, with 32 available hosts (devices) in each subnet. The DTS router will use the first IP address in the subnet. Infrastructure devices will begin with the fourth IP address. See sample table below.

Network	Router	Infrastructure IP Range
10.1.1.0	10.1.1.1	10.1.1.4 – 10.1.1.31
10.1.1.32	10.1.1.33	10.1.1.36 – 10.1.1.63
10.1.1.64	10.1.1.65	10.1.1.68 – 10.1.1.95
10.11.96	10.1.1.97	10.1.1.100 – 10.1.1.127
10.1.1.128	10.1.1.129	10.1.1.132 – 10.1.1.159
10.1.1.160	10.1.1.161	10.1.1.164 – 10.1.1.191
10.1.1.192	10.1.1.193	10.1.1.196 – 10.1.1.223
10.1.1.224	10.1.1.225	10.1.1.228 – 10.1.1.255

User Subnets (networks)

Category	Standard	Remarks
Subnet Class	Users will have full class C's for their IP addresses	
Network Assignment	Networks will be assigned in order as rollout proceeds (as with the management networks).	
Network Start	The first network used will be 10.1.8.0	
Subnet Expansion	Each remote site will have either 1 or 2 additional class C, not initially configured, but allocated for future use	
Initial Network	Each remote site's initial user network will be an even numbered network (10.1.8.0, 10.1.10.0, etc.).	

Usage of 4th Octet

Sites With Separate Management Networks		
Address Range	**Purpose**	**Quantity**
10.1.x.0	Network	
.1	Default gateway (actual or HSRP)	1
.2-.3	Default gateway (switches if HSRP)	2
.4-.15	Reserved for future use	12
.16-.191	Computers	176
.192-.223	Special use (NAT, switches, etc)	32
.224-.254	Printers	31
.255	Broadcast	1
		255 Total

Sites With Combined User and Management Networks		
Address Range	**Purpose**	**Quantity**
10.1.x.0	Network	
.1	Default gateway (actual or HSRP)	1
.2-.3	Default gateway (switches if HSRP)	2
.4-.31	Infrastructure Management	28
. .32-.191	Computers	160
.192-.223	Special use (NAT, switches, etc)	32
.224-.254	Printers	31
.255	Broadcast	1
		255 Total

Items to be addressed with site contact:

- Redefine print queues
- Readdress servers and network devices.
- Note any applications that require specific access to foreign entities
- Note any (internet) sources that require access to devices within the site
- Note any (extranet) sources that require access to devices within the site
- Reboot all workstations

4.6 Network Management Standards

Category	Standard	Remarks
Up/Down Alerting	HP OpenView Network Node Manager 7.5 or higher	
Device Configuration	CiscoWorks 2000 LAN Management System 2.5 and Virtual Management System 2.3 or higher	
Performance Monitoring	nGenius Performance Manager 3.01 or higher	
Authentication	Cisco TACACS Windows v3.3	

4.7 Remote Access Standards

Category	Standard	Remarks
VPN Client	Cisco VPN Client	VPN provided via DTS

4.8 Enterprise Video Conferencing Standards

The general design of the CDHS Enterprise Video Conferencing network incorporates ISDN PRI's to our larger office locations and multiple ISDN BRI's at our smaller office locations. In a large campus environment, where there are multiple video conferencing rooms, CDHS incorporates a gateway to convert the ISDN based H.320 protocol to the H.323 protocol so that IPVC can be distributed throughout the campus.

Category	Standard	Remarks
End Stations	Tandberg stations	Sized according to need / room size.
MCU	Tandberg MCU 16	Centralized
Gateway	Tandberg Gatekeeper	Primarily for campus environment use.
Management.	Tandberg Management Suite (TMS) & Scheduler	Centralized

5 Naming Standards

5.1 E-mail Address Standards

The CDHS Internet mail address standard will consist of the individual's first name initial followed by up to 7 characters of their last name, followed by @dhs.ca.gov. Example: jdoe@dhs.ca.gov.

Duplicate names will be differentiated by the addition of a number added to the end of the individual's name.
Example: jdoe2@dhs.ca.gov.

No other special characters will be supported in Internet mail addresses. Though other SMTP aliases may also be supported, this standard is to be used in all publications and correspondence where reference to CDHS Internet mail addresses is made.

5.2 Userid Naming Standards

Userids must be unique across all of CDHS, and use only alphabetic and numeric characters. The following naming conventions are to be used within CDHS:

- Userid is constructed with the person's first initial and last name, up to 8 characters
- Conflicts will be resolved by adding a number to the end of the Userid, keeping it within 8 characters
- The first two letters will be capitalized
- The full name field will be "Last Name, First Name"

Administrative Userids will be the same as the regular Userid, but with an "a" suffix.

5.3 PC Naming Standards

The following naming conventions must be used on all CDHS workstations:

All workstations will be named **XXXYYYYZZZZZZZZ** where:

XXX is the acronym assigned to the program, branch or division (3 chars)
YYYY represents the facility location number (4 digits)
ZZZZZZZZ represents the CDHS asset tag number (8 chars max)

If assistance is needed on naming, contact ITSD through the Remedy help desk system.

5.4 Network Printer Naming Standards

The following naming conventions must be used on all CDHS networked printers:

Printer Name (or Description):
9999-999-XXX-Q99 Make-Model-UserVariable

The first 4-digit field is the building location code, the next 3-digit field is the Floor #, the next 3 letters are the program ID and the last 2-digit is the print queue sequential #. The printer Make and Model, and specific user(s) if any, are appended to be more informational.

Example: 1541-1st-ITS-Q01 HP LaserJet 4050 Snoopy, which means: "location code 1541 (Bldg 173, 1615 Capitol Ave.), 1st Floor, ITSD, Print Queue 01, which is a HP LaserJet 4050 and may have a common name of Snoopy if desired by the program."

If assistance is needed on naming, contact ITSD through the Remedy help desk system.

5.5 Server Naming Standards

The following naming conventions must be used on all CDHS servers. Additionally, the description field within Active Directory should be filled in with the location of the server.

Windows Servers are named **DHSXXXXYYYNN** where:

DHS DHS is always the first 3 characters.
XXXX Physical location, Domain name, Zone type or Program name, and may use 3 or 4 characters
YYY Server function or application type, and is 2 or 3 characters.
NN Is a two digit sequential number (01-99) to make the server unique when multiple servers of one type exist and also indicate the type of server

The following page gives examples of the most common uses of the XXXX and YYY fields

DHSXXXXYYYNN Breakdown

Use of XXXX Field:

EXC	Exchange Server
EXT	Server in the Extranet Domain and zone
INT	Server in the Internet Domain and zone
RLC	Server at Richmond Labs Campus
SAC	Server in the Sacramento Area
XXXX	In some cases this might be a program acronym

Use of YYY Field:

APP	Custom Applications
BKP	System Backup
CDR	CD ROM Storage
DHC	Dynamic Host Configuration Protocol (DHCP)
DNS	Domain Name System (DNS)
FTP	IIS with Internet File Transfer Protocol
IDC	Active Directory Intranet Domain Controller
INT	Internet Support Services within the Intranet Zone
MSG	Exchange Mailbox Server
OWA	Exchange Outlook Web Access Server
PRX	Proxy Server
PRT	Print Server
RAS	Remote Access Server
RDC	Active Directory Intranet/Root Domain Controller

RDM	Remedy Server
SAA	SAA Gateway
SMS	System Management Server
SNA	System Network Architecture Communication Server
SPR	Spare Server
SQL	SQL Database Server
SRV	File and Print Server
SS	Site Server/Windows Commerce Server
UTL	Utility/Multiple Function
WNS	Windows Internet Naming Service
ZZZ	Specific Application, i.e. DhsSacTrak01, DhsSacVisg01, DhsSacDB201, DhsSacInv01, and DhsSacAcc01

Use of NN field:

01 – 19	Production Server
20 – 29	Test Server (Production Environment)
30 – 39	Development Server
40 – 49	Lab Server

5.6 Group Naming Standards

The following naming conventions must be used when creating groups in Active Directory or on servers.

- Group names should only use A-Z, a-z, 0-9, and dashes. Spaces should not be used unless necessary.
- Group names should include an acronym which identifies the program area or application which the group is associated with.
- Global Groups should only have a DHS prefix if they were previously migrated from an NT4 domain.
- Domain Local Group must begin with the DLG- prefix.
- Server based local groups should be avoided, however if required should have a LOC- prefix.
- Global Groups should be used for organizing people by role, function, organization, or project. Domain Local and Server Local groups should be matched up with specific rights to be granted, and then linked to one or more global groups.
- The Description field should be used to provide additional information about the purpose of the group.

5.7 Group Policy Object Naming Standards

Group Policy Objects within Active Directory must contain the acronym associated with the program or application. Where applicable, the acronym should match the OU the Group Policy is associated with. Misnamed or unidentifiable Group Policy objects are subject to removal.

5.8 DNS Naming Standards

All URL's or DNS names needing visibility only to internal CDHS staff will be placed on the CDHS Internal DNS system. These will be placed within the DNS suffix **intra.dhs.ca.gov**. These names will only be visible to computers on the CDHS network.

URL's or DNS names also needing visibility outside of CDHS (i.e. other state agencies and Internet) will be placed on the CDHS External DNS system. These will be placed within the DNS suffix **dhs.ca.gov**. Names should not be placed in the External DNS unless necessary, due to security considerations.

DNS name creation requests pointed to servers which do not meet the following criteria may require approval by the CDHS CIO:

- Meet all CDHS IT standards
- Are approved by the CDHS Information Security Office
- Meet CDHS and State project guidelines, e.g., FSR requirements
- Are hosted on the CDHS network

6 Programming Standards

6.1 Development Languages

The following are standard languages currently in use within CDHS. Note: No new development should be done using the MS Windows - Legacy languages.

MS Windows – New Development
Visual Basic .Net
C#

MS Windows – Scripting
VB Script
Java Script

MS Windows – Legacy Development
Visual Basic 5.0
Clipper 5.2, 5.3, 97
Power Builder 5, 8

Mainframe
COBOL
IBM VisGen (IBM Visual Age Generator)
EGL, Java (IBM Rational Application Developer)
Easytrieve
Natural (Adabase)
REXX
JCL

Database
SQL

7 Appendix

7.1 IT Standards Exception Request Form

The form on the following page must be used when requesting an exception to these standards.

California Department of Health Services
Information Technology Services Division
Revised 04/01/2006

REQUEST FOR EXCEPTION
FROM CDHS INFORMATION TECHNOLOGY STANDARDS

	Request Date: ____/____/____
Requestor's Name:	Phone #:
Division:	Branch:
Section:	

This request involves the following area(s): ___Hardware ___Software ___ Application Architecture
___Network Architecture ___Security ___Other

Nature of request:
Alternative(s) considered:
Justification:
I2E's Recommendation: Approve ☐ Deny ☐ _____ Date: ____/____/_____ I2E Chair
APPROVALS
Information Security Officer Approve ☐ Deny ☐ _____ Date: ____/____/_____
Chief Information Officer Approve ☐ Deny ☐ _____ Date: ____/____/_____

7.2 IT Standards Exception Request Process

1. Purpose

The purpose of this document is to specify the exception process by which hardware, software, and applications that do not appear on the CDHS IT standards list are reviewed and approved or denied.

2. Scope

This scope of this exception process covers the initiation of an exception request by a CDHS program, section, or unit for the purchase of an unapproved IT item to the I2E committee, the I2E committee's deliberations and recommendations, and the subsequent approval or denial of the request by the CDHS CISO and CIO. This document focuses on the I2E processes used in recommending and obtaining an exception from the CIO. It does not include the ITSD procurement approval process.

3. Definitions

- **Unapproved or non-standard item -** Hardware, software, or application that does not appear in the current "DHS IT Hardware and Software Standards" document.
- **Requestor** - A person within a CDHS program who, for programmatic necessity, requests the procurement, installation, and use of an unapproved item.
- **I2E Committee** - The chartered committee responsible for reviewing new technologies, recommending IT standards and making recommendations for approval or denial of unapproved items.
- **Exception request** - The "Request for Exception from CDHS IT Standards" form requesting approval for purchase or use of an unapproved item.
- **CDHS** - The California Department of Health Services.
- **CIO** - The Chief Information Officer of CDHS.
- **CISO** - The Chief Information Security Officer of CDHS.

4. Requesting an Exception

4.1 Prior to the procurement of unapproved IT items, the requestor completes the **Request for Exception from CDHS IT Standards** form and submits it to the I2E Chair.

4.2 The I2E chairperson logs the request, schedules an agenda item for the next I2E meeting and sends an electronic copy of the request form to the I2E distribution list.

4.3 The requestor must attend the scheduled I2E meeting to answer questions or provide additional information as needed.

4.4 The I2E committee discusses the exception and decides whether to vote on it or assign it to an appropriate ITSD unit for further analysis.

4.4.1 If assigned, the lead ITSD unit will perform required analysis and may perform testing in conjunction with the program or request that the program test the product according to specific test criteria.

4.4.2 The assigned ITSD unit makes its recommendation back to the I2E.

4.5 I2E votes on the exception.

4.6 I2E chair submits the I2E recommendation to ISO.

4.7 ISO signs exception request and sends the form back to the I2E Chair.

4.8 I2E chairperson submits the form to the CIO.

4.9 CIO signs the exception request and sends the form back to the I2E chair.

4.10 I2E chair notifies the I2E and the requestor of the approval/denial and sends the signed form to the requestor.

4.11 If approved, the program submits the exception request form with the procurement documents to the ITSD administration unit for processing.

4.12 The approved **exceptions will be** published in the CDHS website for future reference.

5. Responsibilities

5.2 The I2E Chair is responsible for assuring that the exception request is initiated, scheduled, communicated and tracked through the approval process.

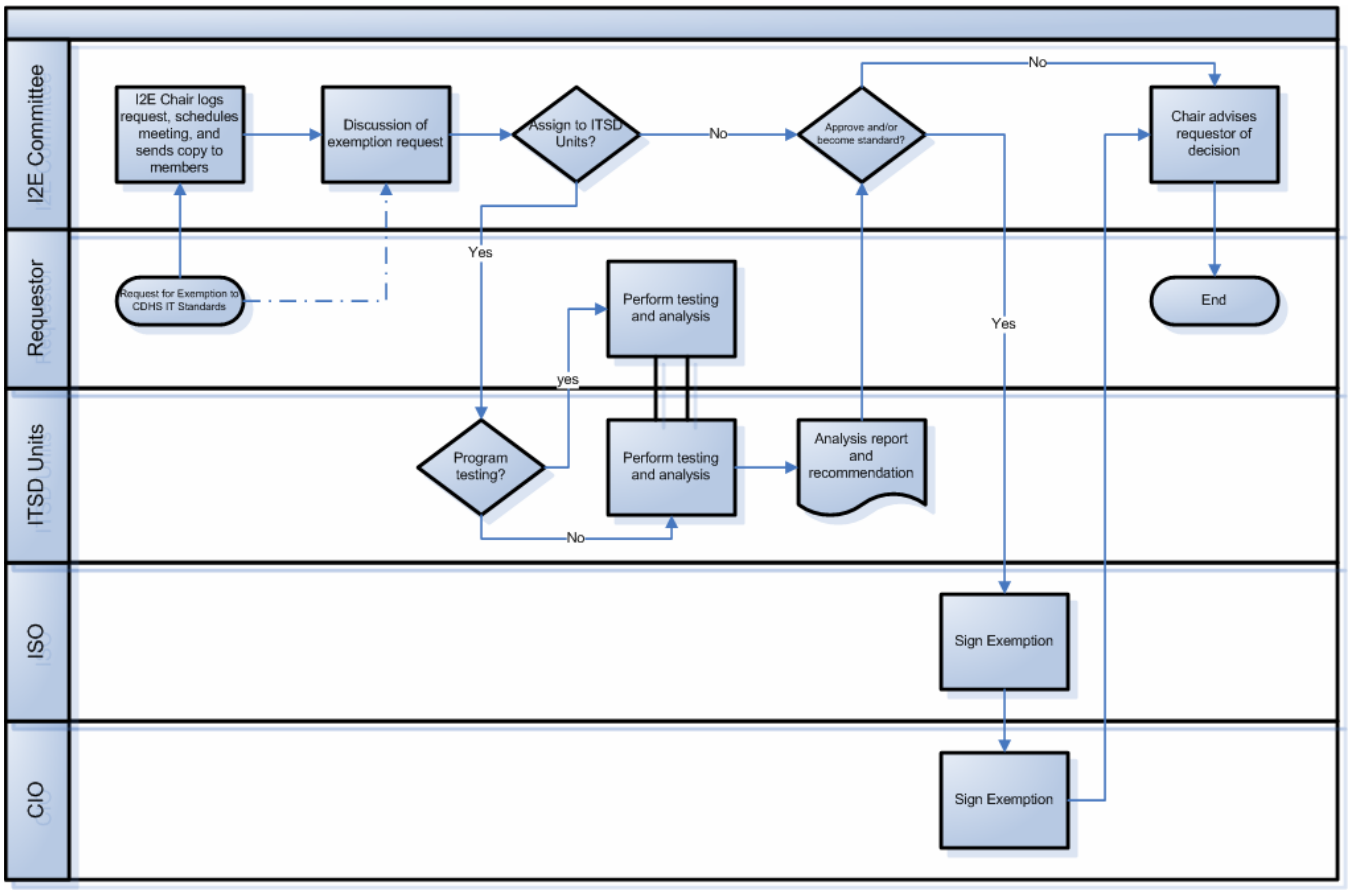
5.3 The I2E committee is responsible for analyzing the request and making a recommendation to the CISO and CIO.

5.4 ITSD Units are responsible for the analysis of an exception item(s) and the establishment of test criteria if required.

5.5 The CISO and CIO are responsible for approving or denying the exception request.

5.6 The requestor is responsible for submitting the exception request, providing clarifying information to the I2E Committee, and aiding in the testing of the product as requested.

6. Standard Exception Process Flowchart



7.3 Revision History

The following revisions have made since the previous version (August 11, 2005)

Section	Changes
1.2	Updated exception process description.
1.4	Definitions added for laptop, PC, PDA, and Tier 1 build. Definition of individual removed. Wording of workgroup printer updated.
2.1	Updated HP desktop model. Updated Lenova laptop to mini-dock instead of port replicator.
2.1	Added Gateway desktop and laptop.
2.2	Updated LCD and CRT monitor models.
2.3.1	Added low volume, workgroup LaserJet printer (2420n). Updated color LaserJet model. Added HP Plotter.
2.3.2	Added HP Mobile Printer.
2.3.3	Correction made to multifunction printer model number.
2.4	Intro text updated. Added SP2 for Windows XP and Office 2003. Added end of support dates. Updated SAV version. Moved Guardian Edge from 2.5 to 2.4 and updated name and version.
2.5	Added SAS, ArcGIS, Photoshop, Crystal Reports, SnagIt, Camtasia, and Dragon NaturallySpeaking. Removed old versions of FrontPage and Acrobat. Added end of support dates.
2.6	Added new section with administrative utilities. Added Ghost, Remote Control, Netpro, Dameware, User Manager Pro, Service Account Manager, and Active Administrator.
2.7.2	Updated Blackberry version numbers and models
3.1.1	Changed standard server configuration to Dell.
3.1.2	Changed high end server configuration to Dell.
3.2	Added end of support dates.
3.3.1	Reorganized messaging server configuration and updated versions.
3.3.2	Moved Spotlight to supported only status. Added Content Management Server. Added end of support dates.
3.3.3	SQL service pack level updated to SP4. Various updates on SQL admin tools and versions. Added end of support dates.
3.3.5	Version number of Blackberry BES server updated.
4.1.1	Point-to-Point added to T3 category.
4.3.1	Internal CSU/DSU added to all items.
4.3.2	3750G changed to 3750/3750G.
6.0	Programming Standards Section Added.
7.1	Section title renamed, section number changed. Exception form updated.
7.2	Exception process added.
7.3	Revision history section modified and updated.
Multiple	Changed all occurrences of HHSDC to DTS, and all DHS to CDHS.